REMARKS

Claims 1-37 are currently pending in the application. Claims 1, 15, 18, 27 and 31-37 were rejected. Claims 2-14, 16, 17, 19-26 and 28-30 were objected to. Claim 12 has been amended.

The Examiner objected to claim 12 because of a minor informality. Claim 12 has been amended to correct the informality and the objection is believed addressed thereby.

The Examiner rejected claims 1, 15, 18, 27 and 31 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,546,451 (Abu-Lebdeh). The rejection is respectfully traversed.

As an initial matter, the following remarks assume that the Abu-Lebdeh patent to which the Examiner referred is, in fact, U.S. Patent No. 6,715,023. That is, U.S. Patent No. 6,546,451 is issued to Venkataraman et al. and makes no reference to a PCI bus switch architecture. A search of the U.S. patent records revealed a single patent, i.e., U.S. Patent No. 6,715,023, in the name of Abu-Lebdeh. As this patent appears to correspond to specific references made by the Examiner, the Applicant believe this is the patent being asserted by the Examiner against the present application, and have proceeded based on this assumption.

Beginning at column 3, line 46, Abu-Lebdeh describes a multi-port PCI bus switch 202 which includes a plurality of PCI port controllers 210A-G and a crossbar switch 230. The PCI port controllers are each coupled to a PCI bus (i.e., buses 1-6). Primary port controller 210G is coupled to a main system bus and operates in a manner analogous to a primary port in a conventional PCI architecture. Secondary port controllers 210A-F are each coupled to a respective local bus and operate in a manner analogous to a secondary port in a conventional PCI architecture.

The Examiner correctly stated that Abu-Lebdeh does not teach clock domain converters as recited in the claims of the present application. However, the Examiner went on to assert that

because the clock speed of Abu-Lebdeh's crossbar (e.g., 230, 530 or 1230) may be independent of the clock speeds associated with each of the port controllers, Abu-Lebdeh's crossbar operated in an asynchronous domain, and that this therefore obviated the present invention. The Applicant's respectfully disagree with the Examiner's reasoning.

As stated in the present application at page 6, lines 20-22, "[a]synchronous VLSI is an active area of research and development in digital circuit design. It refers to all forms of digital circuit design *in which there is no global clock synchronization signal.*" Emphasis added. By contrast, as shown in Fig. 14 of Abu-Lebdeh and described throughout the specification (see col. 7, l. 16; col. 11, l. 1) the crossbar employed by Abu-Lebdeh's PCI switch bus operates in accordance with a system clock, i.e., it is a synchronous circuit. At best, Abu-Lebdeh's crossbar can be characterized as having its own synchronous domain. It cannot, by definition, be characterized as being asynchronous or operating in an asynchronous domain.

Therefore, the port controllers of Abu-Lebdeh cannot be analogized to the clock domain converters recited in claim 1 because they do not "convert data between the clock domain of the corresponding synchronous module and an asynchronous domain characterized by transmission of data according to an asynchronous handshake protocol." Rather, Abu-Lebdeh's port controllers operate to convert data between different synchronous domains, i.e., the synchronous domains of the local PCI buses and the clock-controlled crossbar switch. The Examiner's characterization of Abu-Lebdeh's crossbar as operating in an asynchronous domain not only ignores the explicit description in the reference, but also the distinction between synchronous and asynchronous domains which is explicitly recited in the claims of the present application.

In view of the foregoing, the Applicants respectfully submit that the rejection of claim 1 as being obvious over Abu-Lebdeh should be withdrawn. In addition, the Applicants respectfully request that the rejection of claims 15, 18, 27 and 31-37 be withdrawn for at least the reasons discussed.

The Applicants respectfully acknowledge the Examiner's indication of allowable subject

matter in claims 2-14, 16, 17, 19-26 and 28-30. However, in view of the foregoing, the

Applicants believe these claims to be allowable in their current condition without amendment.

In view of the foregoing, Applicants believe all claims now pending in this application

are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is

respectfully requested. If the Examiner believes a telephone conference would expedite

prosecution of this application, please telephone the undersigned at (510) 843-6200.

Respectfully submitted,
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